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THE WHITE HOUSE WASHINGTON

ATTACHMENTS

CABINET AFFAIRS STAFFING MEMORANDUM

Executive Registry	1
82-1114	4

JECT: CABINET COUNCI	L ON COM	MERCE A	AND TRADE April 20	Meeting	
	ACTION	FYI		ACTION	FYI
Vice President State Treasury Defense Attorney General Interior Agriculture Commerce Labor HHS HUD Transportation Energy Education Counsellor OMB	० मेनेनेनेनेनेनेनेनेनेनेनेनेनेनेन		Baker Deaver Clark Darman (For WH Staffing) Harper Jenkins Gray Mike Wheeler		
UN USTR			CCCT/Kass CCEA/Porter		
CEA CEQ OSTP SBA, Sanders			CCFA/Boggs CCHR/Carleson CCLP/Uhlmann CCNRE/Boggs	_ _ _ _	_ _ _

Attached are the agenda and background papers for tomorrow's meeting of the Cabinet Council on Commerce and Trade, scheduled for 8:45 AM in the Roosevelt Room.

Because of the sensitivity of the topic, attendance at tomorrow's meeting will be limited to $\underline{PRINCIPALS}$ ONLY. Please contact our office if you plan to attend.

RETURN TO:

☐ Craig L. Fuller
Assistant to the President
for Cabinet Affairs
456–2823

Becky Norton Dunlop Director, Office of Cabinet Affairs 456–2800 62 99A

THE WHITE HOUSE

WASHINGTON

CABINET COUNCIL ON COMMERCE AND TRADE

April 20, 1982

8:45 AM

Roosevelt Room

AGENDA

1. LANDSAT AND MEDSAT Activities Transfer to the Private Sector/CM106

"SECRET"



THE SECRETARY OF COMMERCE Visibington, D.C. 20230

APR 16 1982

MEMORANDUM FOR THE CABINET COUNCIL ON COMMERCE AND TRADE

FROM:

Malcolm Baldrige MB

Chairman

SUBJECT: Commercialization of Weather Satellites and Landsat

The ad hoc study team on national security implications of commercializing the civil weather satellites has completed its work. Two papers, both with classified attachments, are submitted for your consideration. The first paper provides additional material on the relationship between the civil weather satellites and national security activities. The second paper reiterates the decisions required on the Landsat. These were discussed at the last meeting of the CCCT.

Four decisions by the Cabinet Council are needed:

- Should the operation of the civil weather satellites be transferred to the private sector?
- 2. Should further Federal support be provided to sustain Landsat after the demise of Landsat D'?
- 3. If #2 is answered affirmatively, should a supplemental appropriation be sought to maintain continuity of Landsat data?
- 4. If #2 is answered affirmatively, what level of Federal support should be guaranteed to sustain Landsat?

Attachments

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CABINET COUNCIL DECISION MEMORANDUM

- I. Subject: Private Sector Transfer of Civil Weather Satellite Programs*
- II. Originator: Working Group of the Cabinet Council on Commerce and Trade

III. Date: April 14, 1982

IV. Issue: Should the Administration consider simultaneously private sector transfer of both civil weather and land remote sensing systems?

NATIONAL SECURITY IMPLICATIONS

BACKGROUND: The Cabinet Council on Commerce and Trade (CCCT) met on March 17, 1982, but deferred making a decision pending receipt of further information on national security implications of transferring the civil weather satellites to the private sector.

ANALYSIS: The national security concerns are described in the attached classified documents, one provided by DOD and one by DOC/NOAA.

SUMMARY

Mission responsiveness by the civil system to those concerns requires: ability for DOD to switch to use of civil satellites without substantive loss of capability, routine operational data to complement the Defense Meteorological Satellite Program (DMSP), assured global coverage, timeliness of data processing, accommodation of special needs, DOD control of satellites in emergencies, and denial of satellite use to a hostile power.

Policy decisions are needed to incorporate these requirements into future actions.

Technical controls that must be continued irrespective of the decision that is made are: (1) compatibility of the communications and data system between the civil and DMSP systems, (2) selection of instruments for a given weather satellite, (3) selection of measurement parameters of environmental instruments, and (4) the definition of data products (and their formats) delivered directly or via the evolving shared processing network to the National Weather Service, Air Force Global Weather Central, and the Fleet Numerical Oceanography Center.

Conclusion: These technical considerations, although complicated, can be satisfied by private industry given time and funds.

Government assets available for transfer to the private sector include two fully operational geostationary satellites, two partially operational geostationary satellites, and two fully operational polar orbiting satellites—all in space. Four polar orbiters are in manufacture or storage. One geostationary satellite is in storage awaiting launch and two are under procurement. Tracking and data processing and distribution facilities are located at Wallops Island, Virginia; Suitland, Maryland; and a facility shared with NASA in Alaska. The satellite assets listed above meet U.S. civil needs until the end of the decade.

Conclusion: A large fixed plant and satellite inventory is in place.

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^{*}Replaces the civil weather satellite Decision Memorandum discussed in the March 17, 1982, meeting of the CCCT.

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Disruption of weather satellite service, which meets vital national security and civil needs, cannot be allowed. This leads to constraints on any process of transition to the private sector.

Transition considerations: Any transition involving a change of the space segment (including its orbital parameters), ground facilities, or data products could not be under the unilateral control of the private sector entity. If such an entity were in place, mutually beneficial changes could be negotiated between the supplier and the Government.

Interrelations:

The latitude for adjustment of weather product format is restricted. More than one thousand earth stations receive weather products by direct broadcast from U.S. civil weather satellites on a daily basis. Approximately 400 are operated by foreign organizations in more than 120 countries and approximately 160 are operated by the U.S. military (with 89 additional under procurement).

Computer-based forecasting systems of the National Weather Service, Air Force, and Navy are designed to accept data in established formats with particular characteristics. The same is true of the forecasting centers in foreign countries that employ the data. The experimental state of some major weather satellite sensors—the atmospheric sounders on both the polar orbiting and geostationary satellites—must also be considered. A Weather Service role would be required in planning their evolution to operational use.

The inventory of operational sensors awaiting flight, including Stratospheric Sounding Units supplied by the United Kingdom and Argos data collection units supplied by France, must also be considered. This issue has foreign policy consequences as well as transition effects.

Finally, the data processing systems for the National Weather Service, Air Force, and Navy are integrated in the Shared Processing System. All receive civil and DMSP data, but each specialize in particular products: the Air Force prepares all imagery, the Navy analyzes sea surface temperature, and NOAA does all analyses of soundings, both civil and defense.

Conclusion: The numerous technical interrelations and the investments by user groups in data processing and analysis systems permit little flexibility in meeting their requirements, and no flexibility that would be under a supplier's unilateral control.

OTHER CONSIDERATIONS:

OMB has stated there is no intent to modify U.S. participation in the 100-year-old free international exchange of weather data. For the present it is assumed that there are no major international concerns that cannot be accommodated as long as explicit contractual safeguards are provided to guarantee continued international data flow as at present. Fears have been expressed in the World Meteorological Organization that U.S. policy could change in the future. The U.S. is the principal user and chief beneficiary of the exchange of data, and the international data is vital to national defense operations.

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Competitive options for weather satellite transfer to or operation by the private sector would be more numerous than those for the Landsats. Several firms have expressed interest in a variety of arrangements for the weather satellite operation. Fewer are willing to consider Landsat operation alone.

Increasing the cost of vital weather satellite service to support the more speculative Landsat activities would not be appropriate.

OPTIONS: Two options are available:

Option 1 - Continue the present method of operation.

This option is based on the conclusion that the complex interfaces and vital national needs do not warrant a major change at this time.

Option 2 - Transfer to the private sector ownership and management of the civil weather satellites, either separately or jointly with Landsat.

If this option is adopted, it will be necessary to:

- o Prepare the necessary statement of work.
- o Develop legislation for transfer of property and regulation to protect vital Government interests, and submit to Congress.
- o Proceed with transfer after passage of legislation.

NEXT STEPS:

If Option 1 is chosen, no further action by the CCCT is necessary.

If Option 2 is chosen, the NSC must prepare a statement of controls and authorities that must be preserved to the Government to satisfy national security requirements.

If Option 2 is chosen, a strategy must be developed to obtain appropriate legislative action.

AGENCY POSITIONS:

The Departments of Defense and Commerce and the Office of Science and Technology Policy recommend Option 1. They see no advantage and potential conflicts in commercialization of the civil weather satellites.

The Office of Management and Budget and the National Security Council recommend proceeding with commercialization. They see no insurmountable obstacles.

The Department of State is satisfied with current international arrangements which would continue if Option 1 were adopted. However, the Department can also accept Option 2 provided that the private sector operator safeguards the current satisfactory system of international weather data exchange.

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SECRET

NATIONAL SECURITY SUPPORT BY THE CIVIL WEATHER SATELLITES

- (S) The civil weather satellites provide essential support to national security systems. Since August, 1980 they have provided the only means for the assessment of cloud cover and visibility in certain critical areas of the world. This role is in addition to the normal role of providing general weather data that both complements and supplements that gathered by the Defense Meteorological Satellite Program (DMSP).
- (S) An Air Force officer assigned to the National Earth Satellite Service (NESS) provides assignments in terms of latitude and longitude, and time or frequency of coverage for certain areas. These areas are out of sight of the normal earth stations employed by NOAA and require the use of the Limited Area Coverage (LAC) mode in which high resolution imagery data are stored on a tape recorder for later transmission to the earth stations at Fairbanks. Alaska or Wallops Island, Virginia. The received digital data is then retransmitted to Offutt Air Force Base, Nebraska (to the Air Force Global Weather Central) and to Suitland, Maryland. These actions and subsequent data processing must be carried out on a demanding time scale.
- (S) The national security use of the LAC mode fully occupies the capacity of the system. The recording capability of the on-board tape recorders is sufficient for slightly less than 10% of the total orbit. Their use must be managed carefully to meet all requirements. Because the system is at capacity, "spoofing" by directing coverage of targets not genuinely of interest is not feasible. Thus, the utilization of the 10% of the orbit in which the LAC mode is used is an indication of the areas during a given period in which national security interests are focused.
- (S) The back-up role that the civil weather satellites must play in support of the DMSP must continue to make possible the operations described above.

Classified by Anthony J. Calio,

Deputy Administrator, NOAA, April 13, 1982

Review on April 13, 1988

SECRET

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8 April 1982

National Security Concerns Regarding Meteorological Satellite Commercialization

Security Concerns

- (S) Comprehensive and timely weather information is essential for the effective employment of military power. A hostile nation can deny access to weather information from conventional sources within the territory it controls. The weather satellite provides a means to circumvent these controls and obtain useful data from otherwise silent or data sparse areas. (See Tab A for a description of US meteorological satellite systems.) In order to exploit this potential operational advantage, the National Command Authority needs to have the capability to:
 - prevent a hostile nation from taking control of the satellite system, and
 - selectively deny access to the meteorological data to any hostile nation without decreasing the useability of the data to US or friendly forces.

Any contractual agreement or regulatory arrangement which permits commercial development, launch and operation of meteorological satellite systems must include provisions which enable National Command Authority to maintain these controls when such action is determined to be in the interest of national security.

Control Concerns

- (C) Other potential actions which may be taken in national emergencies that must not be encumbered through commercialization include:
 - Relinquishing on-orbit command and control to the National Command Authority.
 - Rescheduling satellite launch for new or replacement capability to meet national security needs as determined by DoD.
 - Routing data flow through DoD for selective control and dissemination.
 - Altering coverage to meet defense needs through movement of geosynchronous satellites or through selective application of sensor capabilities.
- (U) The preceeding security and control considerations effectively foreclose either foreign or international ownership of a commercial meteorological satellite system.

Interoperability Concerns

(U) The current Government meteorological program has evolved over the years into a coordinated civil-military system that functions well from both perspectives. It has been scrutinized in the budgeting process to eliminate duplication and minimize cost. Consequently, in the case of military meteorological satellites, the programmed number is sufficient to meet only minimal

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defense needs, and interoperability with the civil system acquisition of a robust system which can function effectiv current polar orbiting satellites were jointly procured by and NASA to maximize technology-sharing. Processing respo shared among National Weather Service, Air Force and Navy. and orbit selection are coordinated to provide optimum cov and military requirements. The end result is an overall co is more capable and sustainable than the sum of its parts. security point of view, commercialization of the civil $\mathsf{met}_{\varepsilon}$ system should not perturb the flexibility and degree of Nat Authority control inherent in the current system.

- (U) Numerous interagency agreements have led to a high lev between the civil-military systems in the areas of hardware processing, service responsibilities, training, data acquis and engineering developments. Commercialization must not be rupt this interface.
 - Meteorological satellites fly sensor packages developed through common research efforts. Although tr fer in their characteristics, such as unique resolution intervals, they obtain information which can be readily the civil or military systems.
- Communications. Direct satellite communications from m satellites (DMSP, NOAA and GOES) can be received by milland or sea. Stored data from the polar orbiters is rec command and control sites and then fed via high-speed wi cations to the National Weather Service, Air Force Globa and the Fleet Numerical Oceanographic Center. All commu ing and planned, are compatible.
- Data Rates. Data rates have been standardized to provide compatible to established inter-agency communications.
- Data Formats. Formats are coordinated in advance among a
- ensure a decode capability to all users. Changes or modi format that create significant software modifications are
- Frequencies. DoD direct ground receivers have been equip the specific transmission frequencies of GOES, NOAA and D. frequencies would cause significant modification costs.
- Transmission Times. With the complementary polar orbits c DMSP, transmission times are also complementary, causing f sion receipt conflicts at direct read-out sites.
- Processing. The three major weather satellite data proces of NOAA, Air Force and Navy are mutually supportive. Each ters has compatible, operational software programs to proc the civil or military orbiters. A Memorandum of Agreement sharing of primary responsibilities for satellite data proc

3

between the major centers. The Air Force processes the imagery data; NOAA the vertical temperature soundings; and the Navy the sea surface temperatures. Processed data is exchanged via high-speed communications. In the event of a catastrophic failure at one of the centers, data processing can be accomplished at another center using in-place software to provide the needed support.

Data Availability Concerns

(U) DoD has access to the international exchange of weather data through NOAA's participation in the World Meteorological Organization (WMO). (See Tab B for description of the WMO). The data is collected and reported in a standardized format and exchanged through the WMO's Global Telecommunication System. DoD weather activities have multiple entries into this system at national, regional and local level. The data is absolutely essential to satisfying the world-wide weather support requirements of deployed defense forces. Commercialization of the NOAA weather satellites must not impede the current free flow of data via the WMO system because of international commercial market interests or user charges.

Intelligence Collection Concerns

(U) See Tab C (higher classification).

Continuity of Operations Concerns

(U) Weather service support for national security forces of defense and intelligence is a continuous, repetitive process. Disruptions to this service owing to contract negotiations, labor disputes, bankruptcy and the like have not occurred in the past. Regulatory control or contractual arrangements would be needed to avoid the opportunity for such disruptions to occur.

8 April 1982

Tab A

National Security Concerns Regarding Meteorological Satellite Commercialization

US Meteorological Satellites

The US Government operates three meteorological satellite (METSAT) systems. Although the programs are similar in the types of information provided, the specific systems characteristics and data usage are markedly different.

- Defense Meteorological Satellite Program (DMSP) is operated by the USAF for the Military Services. The program calls for two polar-orbiting sun synchronous spacecraft providing visual and infrared imagery, day and night, for the entire globe four times each 24 hours. Additional sensors provide temperature, moisture, ionospheric and radiation data. Information transmissions are secure and selective with stored, world-wide data being transmitted to Air Force and Navy Centers for strategic missions, and with local area data being transmitted directly to mobile and fixed receivers at military land sites and naval ships at sea.
- The NOAA and TIROS civil orbiting spacecraft is operated by the National Earth Satellite Service for the National Weather Service (both under NOAA). The program consists of one spacecraft in a polar sun-synchronous orbit flying at a different, complementary time of day from DMSP with a primary sensor obtaining vertical temperature and moisture soundings world-wide twice each day. Additional sensors provide, et al, visual and infrared imagery, stratospheric monitoring, and surface data collection and relay. Transmissions are open and continuous world-wide.
- Geostationary Operational Environmental Satellite (GOES) system is also operated by the National Earth Satellite Service. It consists of two geosynchronous spacecraft positioned to view CONUS and Atlantic Ocean (GOES East) and CONUS and Pacific Ocean (GOES West), respectively. The sensor data is similar to that of NOAA/TIROS, but is transmitted at least every 30 minutes from a fixed position. The data is critical to storm and hurricane warning. Commercial TV uses the data extensively as does the Navy. The program is integral to a world-wide five-spacecraft network (US, Japan, Europe ESA and India --- the USSR may participate in the future).

8 April 1982

Tab B

National Security Concerns Regarding Meteorological Satellite Commercialization

The World Meteorological Organization (WMO)

Background. The WMO is an international organization of the United Nations representing the meteorological communities, both scientific and operational, of all participating nations. The National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce is the US Government's representative in the WMO. The WMO provides a forum for the world-wide exchange concerning all disciplines of geophysics that effect the natural environment of the earth, e.g. meteorology, oceanography, solar-terrestrial physics, vulcanism, polution, etc., and sponsors international experiements to observe and study these effects on a global scale. The World Weather Watch is the basic program of the WMO and consists of three basic elements: observations, data processing and telecommunications -- all highly interdependent.

- Global Observation System consists of facilities and arrangements for making regular, standardized observations of meteorological (and other) parameters at stations on land and at sea, from balloons, aircraft, ships, meteorological satellites and other platforms. Currently there are over 10,000 reports routinely received from the surface-based stations.
- Global Data Processing System consists of world, regional and national meteorological centers with arrangements for the processing of the required observational data in near-real-time, and the storage and retrieval of data for non-real-time users.
- Global Telecommunication System (GTS) consists of world-wide communications facilities and arrangements necessary for the rapid and reliable collection and distribution of the required observational data and processed information. The data from local observation stations is fed into the national network to a regional network and then to the main trunk circuit of the GTS with collection and selective dissemination at each level.

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CABINET COUNCIL DECISION MEMORANDUM

- I. Subject: Private Sector Transfer of the Landsat Activities*
- II. Originator: Working Group of the Cabinet Council on Commerce and Trade
- III. Date: April 14, 1982
- IV. Issue: Required decisions on Landsat

BACKGROUND: The Cabinet Council on Commerce and Trade (CCCT) met on March 17, 1982, but deferred making a decision on Landsat until the decision is made on the civil weather satellites.

ANALYSIS: The national security applications of Landsat are described in the attached classified document.

Tangible benefits of Landsat are projected, but as yet unrealized. Three benefit studies conducted by industry project annual benefits ranging from as little as \$130 million to as much as \$10 billion. Each study has debatable elements, but each also supports the presence of national tangible benefits. Realizing those benefits necessitates the consolidation of a disaggregate market of disparate users, both private and governmental.

<u>Intangible benefits</u> of Landsat have been realized and will continue if it is supported. They include:

- o Increasing the information available to the President to guide strategic deliberations and establish foreign policy (see attachment).
- o Muting efforts in the United Nations to restrict remote sensing of the earth for civil and national defense purposes.
- o Avoiding dependence on foreign-owned satellite systems for important data, or being affected by the foreign policies of supplier countries with regard to prior consent and priority distribution of remotely-sensed data.
- o Important scientific discoveries concerning the earth and its resources.

Magnitude of the private investment to sustain a Landsat system cannot be determined at this time. Capital costs are a function of both technical and marketing decisions, which are in turn affected by data distribution policies.

Federal guarantees are required if a Landsat system or its derivative is to be continued. Current data purchases of \$15 to \$20 million per year are not likely to provide an adequate guarantee for the private sector. It is likely that a guarantee of at least several times that amount, perhaps \$40 to \$100 million, will be required. This has been termed an enhanced commitment. Such an enhanced commitment is not available in any agency's current budget and would require new budget authority.

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^{*}Supplements the Landsat Decision Memorandum in the March 17, 1982, meeting of the CCCT.

Data continuity through the period between the demise of Landsat D and its follow-on Landsat D' and the advent of a private sector system requires prompt action. Nominally four years is required for the manufacture of a Landsat-type satellite. Resolution of policies, selection of a private sector operation, and negotiations for a follow-on satellite will require a minimum of one year. This leads to an FY 1983 requirement to act upon any decision to maintain data continuity after 1987. The action necessary would be a supplemental appropriation between \$15 and \$25 million. Failure to act will ensure a gap in data of one or more years.

CABINET COUNCIL DECISIONS AND CONCURRENCES: The CCCT has a three-level decision to make:

- o Does the value of Landsat data warrant any further Federal support after the demise of Landsat D'? If so:
- o Does the value of Landsat data continuity warrant a supplemental appropriation of \$15 to \$25 million in FY 1983? If so:
- o What level of Federal support is warranted to ensure the availability of Landsat data? Two options are available:
- Option 1 Limit the initial Federal commitment to the present level of \$15 to \$20 million in data purchases by the user agencies. In the future, agencies could allocate additional resources within their budgets as warranted by the value of the data.
- Option 2 Provide an enhanced Federal commitment beyond the above data purchases, perhaps \$40 to \$100 million, to encourage private investment.

NEXT STEPS:

If Landsat data is not determined to have sufficient value to warrant continued Federal support, further action is not necessary.

Data continuity requires the immediate preparation of a request for a supplemental appropriation.

Both options require the Department of Commerce to prepare appropriate legislation for submission to Congress. This would be followed by a competitive selection process. During that process the level of enhanced commitment, if any, would be determined.

